

**What is claimed is:**

1. A transceiver of a terminal for use in a TDD-based mobile communication system comprising:

a receiver for processing a reception signal in a reception mode;

5 a transmitter for processing a transmission signal in a transmission mode;

a switching mechanism operable in the transmission mode and the reception mode; and

a ground divider for dividing grounds for the receiver, the transmitter, and the switching mechanism.

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2. The transceiver of claim 1, wherein the receiver comprises:

a low-noise amplifier for amplifying the reception signal provided by the switching mechanism in the reception mode; and

15 a reception filter for filtering the amplified reception signal and for providing the filtered reception signal to an intermediate frequency processor.

3. The transceiver of claim 1, wherein the transmitter comprises:

a transmission filter for filtering the transmission signal received from an intermediate frequency processor in the transmission mode; and

20 an amplifier for amplifying the filtered transmission signal.

4. The transceiver of claim 3, wherein the transmitter further comprises:

25 an isolator for isolating the transmitter from signal interference created by the switching mechanism.

5. The transceiver of claim 1, wherein the switching mechanism comprises:

an antenna;

5 a switch for selectively connecting the antenna to the receiver and the transmitter; and

a duplexer positioned between the antenna and the switch.

6. The transceiver of claim 1, wherein the ground divider comprises:

10 a first ground separation element for isolating a receiver ground for the receiver and a common ground for the switching mechanism from each other; and

a second ground separation element for isolating a transmitter ground for the transmitter and the common ground.

15 7. The transceiver of claim 5, wherein at least one of the first and second ground separation elements is an inductor.

8. The transceiver of claim 5, wherein at least one of the first and second ground separation elements is a ferrite bead.

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9. The transceiver of claim 2, wherein the switching mechanism comprises:

an antenna;

a duplexer connected to the antenna, the duplexer selecting transmission  
25 and reception frequency via the antenna;

a circulator for sending the reception signal from the duplexer to the receiver and for sending the transmission signal from the transmitter to the antenna, and

a switch installed on a signal line between the circulator and the receiver,  
5 wherein the switch is turned on in the reception mode.

10. A method of data communication in a TDD-based mobile communication system, the method comprising:

processing a reception signal in a reception mode;

10 processing a transmission signal in a transmission mode; where in a switching mechanism operable in the transmission mode and the reception mode; and

dividing grounds for the receiver, the transmitter, and the switching mechanism.

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11. The method claim 10, wherein the step of processing a reception signal in the reception mode comprises:

amplifying the reception signal provided by the switching mechanism, using a low-noise amplifier;

20 filtering the amplified reception signal using a reception filter; and providing the filtered reception signal to an intermediate frequency processor.

12. The transceiver of claim 10, wherein the step of processing a  
25 transmission signal in a transmission mode comprises:

filtering the transmission signal received from an intermediate frequency processor using a transmission filter; and  
amplifying the filtered transmission signal.

5           13.     The method of claim 10, wherein the step of processing a transmission signal in a transmission mode further comprises isolating the transmitter from signal interference created by the switching mechanism.

10           14.     The method of claim 10, wherein the switching mechanism comprises:  
an antenna;  
a switch for selectively connecting the antenna to the receiver and the transmitter; and  
a duplexer positioned between the antenna and the switch.

15           15.     The method of claim 10, wherein the dividing step comprises:  
isolating a receiver ground for a receiver performing the receiving step from a common ground for the switching mechanism, using a first ground separation element.

20           16.     The method of claim 10, wherein the dividing step comprises:  
isolating a transmitter ground for a transmitter performing the transmitting step from a common ground for the switching mechanism, using a second ground separation element.

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17. The method of claim 16, wherein the first ground separation element is an inductor.

18. The method of claim 16, wherein the first ground separation  
5 element is a ferrite bead.

19. The method of claim 16, wherein the second ground separation element is a ferrite bead.

10 20. The method of claim 10, wherein the switching mechanism comprises:

an antenna;

a duplexer connected to the antenna, the duplexer selecting transmission and reception frequency via the antenna;

15 a circulator for sending the reception signal from the duplexer to the receiver and for sending the transmission signal from the transmitter to the antenna, and

a switch installed on a signal line between the circulator and the receiver, wherein the switch is turned on in the reception mode.

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